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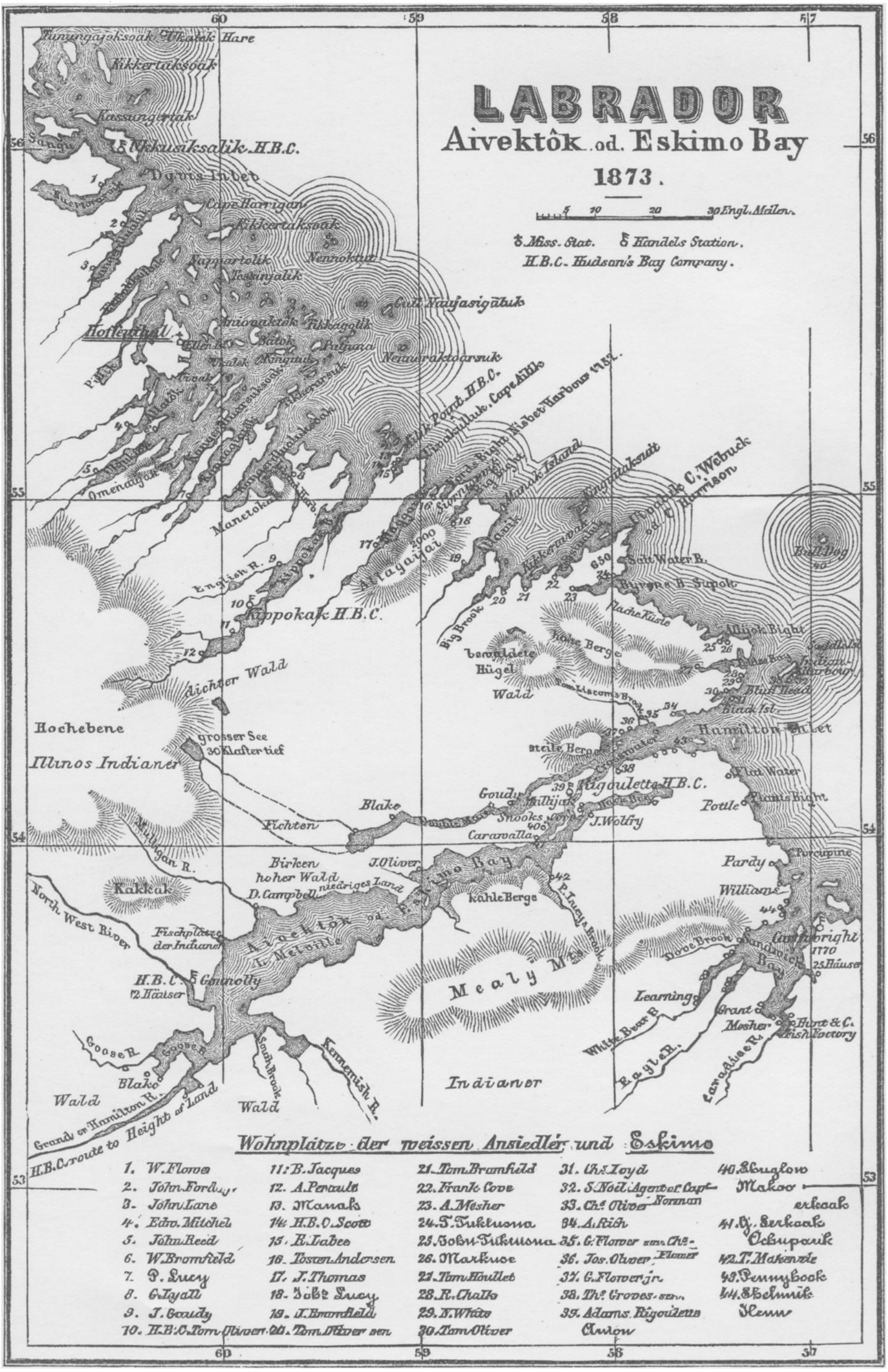LABRADOR
Aivektôk od. Eskimo Bay
1873.
5 10 20 30 Engl. Meilen.
Miss. Stat.
Handels Station.
H.B.C. Hudson's Bay Company.
60
59
58
57
56
55
54
53
Tunungajoksoak
Ukalek Hare
Kikkertaksoak
Kassungerak
Nikkusiksalik H.B.C.
Davis Inlet
Cape Harrigan
Kikkertaksoak
Nennoktut
Kappartolik
Tessinjalik
Cutt Naujasigabuk
Hoffenthal
Nennoraktoarsuk
Fish Point H.B.C.
Cape Kikkertaksoak
Nisbet Harbour
Omenaijak
Manetokak
English R.
Kippokak H.B.C.
Aulatsivik
Nanuk
Eskimo Island
C. Webuck
od. C. Harrison
Salt Water B.
Byrone B. Supok
Bull Dog
Flache Küste
hohe Berge
bewaldete Hügel
Wald
Big Brook
Allicks Bight
Sandwich Island
Indian Harbour
Bluff Head
Black Isl.
Hamilton Inlet
dichter Wald
Hochebene
Illinos Indianer
grosser See
30 Klafter tief
steile Berge
Rigoulette H.B.C.
Goudy
Pottle
Flat Water
Pinnis Bight
Blake
Fichten
Shooks Cove
Caravalla
J. Wolfry
Porcupine
Pardy
Williams
Cartwright
1770
25 Häuser
Sandwich Bay
Birken
hoher Wald
niedriges Land
J. Oliver
D. Campbell
Eskimo Bay
kahle Berge
P. Lucys Brook
Kakkak
Milligan R.
North West River
Fischplätze der Indianer
Aivektôk od. L. Melville
H.B.C. Connolly
12 Häuser
Mealy Mts.
Dove Brook
Learning
Grant
Mesher
Hunt & C. Fish Factory
White Bear R.
Eagle R.
Paradise R.
Goose R.
Blake
Kenemish R.
South Brook
Wald
Indianer
Wald
Grand or Hamilton R.
H.B.C. route to Height of Land
Wohnplätze der weissen Ansiedler und Eskimo
1. W. Flower
2. John Ford
3. John Lane
4. Edw. Mitchel
5. John Reed
6. W. Bromfield
7. P. Lucy
8. G. Lyall
9. J. Goudy
10. H.B.C. Tom Oliver
11. B. Jacques
12. A. Perault
13. Manak
14. H.B.C. Scott
15. R. Labee
16. Tosten Andersen
17. J. Thomas
18. Jobt Lucy
19. J. Bromfield
20. Tom Oliver sen
21. Tom Bromfield
22. Frank Cove
23. A. Mesher
24. S. Tuktusna
25. John Tuktusna
26. Markuse
27. Tom Houllet
28. R. Chalk
29. N. White
30. Tom Oliver
31. Chs. Loyd
32. S. Noel Agent of Capt. Norman
33. Chs. Oliver
34. A. Rich
35. G. Flower sen. Chs. Flower
36. Jos. Oliver
37. G. Flower jr.
38. Ths. Groves sen.
39. Adams. Rigoulette Arrow
40. Shuglow Makoo erkoak
41. G. Serkoak Ockupauk
42. T. Makenzie
43. Pennybook
44. Schmik Henn

NOTES ON THE PHYSICAL GEOGRAPHY OF LABRADOR.

By A. S. PACKARD.

Our knowledge of the interior of the Labrador peninsula is still so scanty, owing to its inaccessibility, its unnavigable rivers, the shortness of the summer season, and the lack of game, as well as the enormous numbers of black flies and mosquitoes, that any description of this country must long remain imperfect. The only scientific explorer of the interior is Professor Hind, who ascended the river Moisie, which, however, is a confluent of the St. Lawrence, and is in fact situated only near the borders of Labrador, in the province of Quebec. None of the larger rivers of Labrador have been explored to near their sources; and no one except Indians, and but a single employé of the Hudson Bay Company (Mr. McLean) has ever crossed any considerable portion of the interior. And yet the peninsula is well watered with streams, rivers, and chains of lakes. I have been informed by residents that the Indians of the interior, presumably the mountaineers, can travel in their canoes from the mouth of the Esquimaux River, which empties into the Strait of Belle Isle, across the country to the Hudson Bay posts in Hamilton Inlet. So far as we have been able to gather from maps and the accounts of explorers, such as McLean and Davies, the latter of whom published an account of the Grand or Hamilton River, and the Moravian missionaries, Kohlmeister and Knoch, who in their "Journal of a Voyage from Okkak" described the Koksoak River and its probable source, as well as from our own scanty observations taken from elevations near the coast, the interior of Labrador is thickly studded with lakes, somewhat as in the Adirondack region of New York, though the interior country is far more broken and mountainous.

It is certainly most desirable that explorers should penetrate this vast and unknown wilderness, however formidable may seem the barriers to travel. These obstacles would be the rapids and water-falls, the long and difficult portages or carries, and the unceasing plague of mosquitoes and black flies. But the annoyance from insects might not be greater than that encountered by explorers in Siberia, or by trout or salmon fishermen in Northern New England and Canada, while the difficulties and dangers of river navigation would not compare with those of a passage through the Colorado River. The route which would be most prolific in results would be to ascend the Meshikimau or Esquimaux River from its mouth near Salmon Bay, in the Strait of Belle Isle, to its source, and thence to connect with the probably adjacent source of Grand or Hamilton River to the Hudson Bay port at Rigolet, in Hamilton or Invuktoke Inlet. Another journey which would be productive of good geographical results, would be to cross the peninsula from Prince Rupert's Land by way of Rupert River and Lake Mistassini to Hamilton Inlet. The Koksoak River should be explored to its sources, and the low, flat wooded region of the East Main, lying between Hudson Bay and the Labrador coast-region, should be adequately mapped. At present, less is known of the vast region between Hudson Bay and the Atlantic Ocean than of perhaps any region of similar extent in North America; although the results of exploration might be of more value to geographical and geological science than to trade and commerce.

Thanks to the labors of the Moravian missionaries, we now have a much better knowledge of the intricacies of the extreme northern coast of Labrador than is afforded by the charts of the British Admiralty or the United States Coast Survey; and it is to the rare opportunity we have been generously afforded by the officers of the Moravian Society in London and Herrnhut, Saxony, that we are able herewith to present maps which are at least approximately correct, and which must for a long time to come be the only source of any exact knowledge of the multitudinous bays, inlets, promontories, and islands of this exceedingly diversified coast.

The first special map of Northern Labrador to be published, was that by the Moravian Brethren, Kohlmeister and Knoch. It comprised the northern extremity of Labrador, north of latitude 57°, including Ungava Bay, and appeared in 1814.

Previous to this, Cartwright, in 1792, had published a map of Sandwich Bay and adjacent regions. Then succeeded the general chart of the coast published by Admiral Bayfield, in 1827, and the later charts of the British Admiralty.

In the United States Coast Survey report for 1860, besides an imperfect outline of the coast given in Mr. Lieber's geological map of the Labrador coast, there is a special map of Eclipse Harbor surveyed by Lieut.-Commanding A. Murray, United States Navy, and drawn to a scale of $\frac{1}{60,000}$, with the soundings indicated.

About the year 1873 (the date is not given on the copy of the map we have received) appeared a map of that portion of the coast embracing the sites of the principal Moravian stations and lying between N. lat. 55° and 59°. It was prepared by L. T. Reichel from the sketches made by himself, and published in the lack of any authentic maps of the coast. For a copy of this and the map of Aivektôk or Eskimo Bay we are indebted to the officers of the Society in Herrnhut, Saxony. On this map are given the route of the ship-channel from the southward to Hopedale, and thence to the different Moravian stations up to Hebron; also the overland sledge-routes between Port Manvers and Okkak, and the latter station and Hebron. There is also an attempt to give in a general way the elevation of the coast, and the elevation of Kaumajet Mt. and Mt. Kiglapeit is given as 4,000 feet. Scales of German and of English miles are also given.

The second special map was also prepared by Rev. L. T. Reichel, and published in 1873. It gives what is probably by far the most authentic map of Hamilton Inlet and Aivektôk, or Eskimo Bay, and the coast northward, the whole area mapped being comprised between latitudes 53° 20′ and 56° 20′; it is of special value in giving a capital idea of the intricate fiord structure of the coast, and also a census of the white and Eskimo residents.

We have also been favored by B. Latrobe, Esq., Secretary of the Moravian Missions in London, with the loan of a MS. map, by Rev. Samuel Weiz, of the coast from Byron Bay in latitude 54° 40′ around to the mouth of George River in Ungava Bay, and kindly allowed to copy it.

With the aid of the new maps of Messrs. Reichel and Weiz we have been able to have compiled the new general map of the Labrador coast herewith presented; the southern portion of the coast being reproduced from the British Admiralty and U. S. Coast Survey charts, as well as those of the Hydrographic Office, U. S. Navy Department, as follows:

No. 9.—River and Gulf of St. Lawrence, Newfoundland, Nova Scotia, and the banks adjacent; Sheet 1. English and French Surveys. Published March, 1868.
No. 731.—Anchorages N. E. coast of Labrador, from Br. Surveys. Published Sept., 1876.
No. 809.—Coast of Labrador, Cape St. Charles to Sandwich Bay. Br. Surveys to 1882.

There are in Lt. Gordon's Report of the Hudson Bay Expedition of 1885, charts of the Ottawa Islands in Hudson Bay, and of one of the islands at Cape Chudleigh.*

In its general features the peninsula of Labrador is an oblong mass of Laurentian rocks situated between the 50th and 62d parallels of north latitude. On the eastern or Atlantic coast it rises abruptly from the ocean as an elevated plateau, forming the termination of the Laurentian chain, which here spreads out into a vast waste of hills and low mountains.

This plateau of hills and mountains, with barren tablelands, rises abruptly from the sea-level, presenting a lofty but stern and forbidding front to the ocean, throughout the whole extent of 1,100 miles of coast from the Strait of Belle Isle to Cape Wolstenholme.

Mountains.—On the northern shores of the Strait of Belle Isle the general elevation of the coast is from

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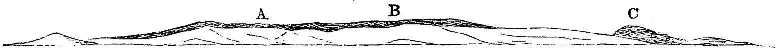
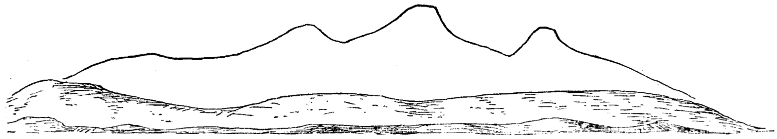
* Sometimes spelled Chidley.

500 to 800 feet, and the highest mountains are the three Bradore Hills, which are respectively 1,135, 1,220, and 1,264 feet in height. From Chateau Bay and Cape Charles the coast rises in height northwards, until at Square Island the higher elevations form mountains about 1,000 feet high. Going farther on, the Mealy Mountains, said to rise to an elevation of 1,482 feet, are seen forming a range extending along the peninsula situated between Sandwich Bay and Eskimo Bay with Hamilton Inlet.



Outer Battle Island seen from the S. W., two miles distant.
A, Main. *B*, 50 ft.? *C*, Caribou Island.



Mount Misery, or Allagaigai, 2170 ft., due W. of Cape Harrison by chart.

Still higher is Mt. Misery, which we suppose to be the same elevation as Mt. Allagaigai, a noble mountain mass rising to an altitude of 2,170 feet, forming the summit of an elevated plateau region lying half-way between Cape Harrison and Hopedale. It is a conspicuous peak seen when crossing the mouth of Hamilton Inlet, and we well remember the grandeur of its appearance when partly wreathed in clouds, which left its summit exposed, so as to make it look much higher than in reality.

Coast just N. of Cape Harrison, about 3 miles W. by S.

The highest elevations in Labrador rise from the irregular coast range between latitude 57° and 60°; and judging from the views published by Dr. Lieber in the U. S. Coast Survey report for 1860, and by Professor Bell in the Report of the Canadian Geological Survey for 1884, the scenery of this part of the country is wonderfully wild and grand, rivalling that of the coast of Norway, and of the coast of Greenland, the mountains being about as high as in those regions. According to Prof. Bell: "After passing the Strait of Belle Isle, the Labrador coast continues high and rugged, and although there are some interruptions to the general rule, the elevation of the land near the coast may be said to increase gradually in going northward, until within seventy statute miles of Cape Chudleigh, where it has attained a height of about 6,000 feet above the sea. Beyond this it again diminishes to this cape, where it is 1,500 feet. From what I have seen quoted of Labrador, and from what I have been able to learn through published accounts from the Hudson Bay Company's officers and the natives, and also judging from the indications afforded by the courses of the rivers and streams, the highest land of the peninsula lies near the coast all along, constituting, in fact, a regular range of mountains parallel to the Atlantic seaboard. In a general way, this range becomes progressively narrower from Hamilton Inlet to Cape Chudleigh."* The highest mountains in Labrador were previously said by Messrs. Kohlmeister and Knoch to rise from a chain of high mountains terminating in the lofty peaks near Aulezavik Island and Cape Chudleigh. One of the smallest of these mountains, Mount Bache, was measured in 1860 by the Eclipse Expedition of the U. S. Coast Survey, and found to be 2,150 feet above the sea-level. This mountain is a gneiss elevation, and a sketch on the geological chart by Mr. Lieber, the geologist of the expedition, shows it to be rounded by glacial action, while lofty, "wild volcanic-looking mountains form a water-shed in the interior, whose craggy peaks have evidently never been ground down by land-ice into domes and rounded tops."

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* Observations on the Geology, etc., of the Labrador Coast, etc., Rep. of Geological Survey of Canada, 1884, p. 10 DD.

While the highest elevations have never been measured, the height of three of the lesser mountains along this part of the coast appears to have been roughly ascertained. Professor Bell states that the mountains on either side of Nachvak Inlet, about 140 miles south of Cape Chudleigh, "rise to heights of from 1,500 to 3,400 feet, but a few miles inland, especially on the south side, they appear to attain an altitude of 5,000 to 6,000 feet, which would correspond with the height of The Four Peaks, near the outer coast line, about midway between Nachvak and Cape Chudleigh." The mountains around Nachvak, he adds, "are steep, rough-sided, peaked, and serrated, and have no appearance of having been glaciated, excepting close to the sea-level." These mountains are formed of Laurentian gneiss, "notwithstanding their extraordinary appearance, so different from the smooth, solid, and more or less rounded outlines of the hills composed of these rocks in most other parts of the Dominion." The height of these mountains was evidently roughly estimated from that of an escarpment on the south side of the inlet at the Hudson Bay Company's port, which "rises to a height of 3,400 feet, as ascertained by Commander J. G. Bolton" (p. 14 DD).

According to the British Admiralty chart and the

Newfoundland Pilot, Cape Chudleigh rises to a height of 1,500 feet above the sea, and the highest point of the Button Islands has an equal elevation (Bell, p. 17 DD).

Port Burwell is situated on the island of which Cape Chudleigh is the northeastern point. This island is separated from the mainland by McLelan's Strait. "Nunaingok is situated on an alluvial flat, extending between the two branches of the strait. The hill which rises steeply on the south side of it is about 700 feet high; but farther in, between the branches and on either side of them, the mountains are from 1,500 to 2,500 feet high, and have rugged tops and sides" (Bell, p. 19 DD).

In his report for 1885 Professor Bell gives no additional measurements of mountains, but observes: "The mountains everywhere in this vicinity [Nachvak Inlet] give evidence of long-continued atmospheric decay. The annual precipitation at the present time is not great, otherwise small glaciers would probably form among these mountains, which lie between latitudes 58° and 60°, and which overlook a sea, bearing field-ice for half the year, and from which bergs are never absent. Patches of snow, however, remain throughout the summer in shaded parts of the slopes and on the highest summits, which range from 4,000 to 6,000 feet above the ocean."*

South of the region visited by Professor Bell are the two mountains of Kaumajet and Kiglapeit, both of which are put at an elevation of 4,000 feet on Rev. L. T. Reichel's map. Of these the former constitutes a peninsula, off which lies the island of which Cape Mugford is the eastern promontory; while Kiglapeit forms the great headland lying between Nain and Okkak in latitude about 57°, and of which Port Manvers is one of the indentations.

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*Ann. Rep. Geol. Surv. Canada, New Ser., vol. i., 1885, p. 8 DD, 1886.

From these facts it will be seen that along this part of the northern coast mountains as high as the Adirondacks, and even the White Mountains of New Hampshire, plunge directly into the sea, and are as wild and sublime as the coast mountains of Norway and Greenland.

Drainage and Rivers.—Of the water-sheds and water-systems of Labrador our knowledge is mostly conjecture, on account of the lack of information regarding the interior. In none of the charts and maps are the rivers and internal lakes accurately represented, and there is the widest discrepancy between the different maps.

The Labrador plateau has an area of about 420,000 square miles. It has a coast-line of about 1,100 miles, stretching from the Strait of Belle Isle to Cape Wolstenholme, and its greatest breadth is said to be 600 miles. It lies between the 49th and 63d parallels of latitude, and the 55th and 79th meridians. Bounded on the east by the Atlantic Ocean, and on the north and west by Hudson Strait and Hudson Bay, its southwestern limits are defined by the Bersiamits, Mistassini, and Rupert rivers. The broadest and in general highest portion of the plateau appears to be in the southern portion of the peninsula, and it is here that the larger rivers appear to take their rise.

From the northern shores of the Gulf of St. Lawrence and Strait of Belle Isle the Labrador plateau rises until it reaches a vast table-land or water-shed in the interior, the edge of which has been reached by Professor Hind in his explorations of the Moisie River.

This elevated region is thought by Professor Hind to attain a height of 2,240 feet above the sea-level. Professor Hind says of the table-land from which the river

Moisie, and also, probably, the Esquimaux as well as Hamilton rivers take their rise: "It is preëminently sterile, and where the country is not burned, caribou moss covers the rocks, with stunted spruce, birch, and aspen, in the hollows and deep ravines. The whole of the table-land is strewed with an infinite number of boulders, sometimes three and four deep; these singular erratics are perched on the summit of every mountain and hill, often on the edges of cliffs; and they vary in size from one foot to twenty in diameter. Language fails to depict the awful desolation of the table-land of the Labrador Peninsula." This table-land or water-shed probably is more or less parallel to the Strait of Belle Isle, and situated between 100 and 150 miles inland. It probably terminates to the northeast in the Mealy Mountains. Numerous rivers descend the steep southern slope into the Gulf of St. Lawrence. Of these the Moisie and Esquimaux rivers are the largest. They are supposed to arise from a chain of lakes on the summit of the water-shed, which also gives rise to the Hamilton River.

The Moisie River forms part of the St. Lawrence River system. It is 250 miles long, and flows south, emptying into that river near the Bay of Seven Islands, at a point west of Anticosti and opposite the northern shore of the Gaspé Peninsula. From this point the streams running into the Gulf assume, the further we go east, a N. W. and S. E. direction. Such is that of the Meshikumau or Esquimaux River, which empties into the western mouth of the Strait of Belle Isle, at the lower Caribou Island. This stream is about 250 miles long, as I learned from residents, and is only navigable for about twelve miles from its mouth by ordinary fishing-boats. There is no large river between this and Hamilton River, which flows into the Atlantic in a direction a little north of east. The latter river seems to flow in a fissure that runs at right angles to the line of upheaval of the syenite and traps of the Atlantic coast; as upon the Gulf coast the rivers flow from the northwest along natural fissures in the earth's crust that run at right angles to the axis of elevation of the Laurentian chain on the north side of the St. Lawrence. In this connection it should be noticed that the fiords on the Atlantic coast of Labrador assume the same direction, and though they agree much in this respect with the direction of those farther south, there is yet a greater west and east course as we go northward toward Cape Chudleigh, until beyond latitude 58° the fiords run in a N. W. and S. E. direction, especially on the Hudson Bay slope. According to Davies, the Grand or Hamilton River is supposed to rise from a chain of lakes in the "rear of the Seven Islands, and flows for a considerable distance on the top of the ridge, if I may so express it, between the head-waters of the rivers falling into the St. Lawrence and those falling into the Hudson Bay and Strait, for they are said by the Indians to be quite close to the waters of the Grand River on either side." Our author also states, that "two hundred miles from its mouth it forces itself through a range of mountains that seems to border the table-land of the interior, in a succession of tremendous falls and rapids for nearly twenty miles. Above these falls the river flows with a very smooth and even current." McLean in 1839 descended the river from the now abandoned Fort Nasquapee, situated on Lake Petchekupau, to its mouth. He had reached the fort from Ungava Bay. Two other important rivers empty into Invuktoke Bay: the Kenamon, which flows in from the south, and the Nasquapee or Northwest River, which is a larger stream with a very circuitous southeasterly course.

Professor Hind gives us the fullest information as to the rivers of this region, and I should regard his map as, in this respect, the most authentic one yet published. The situations of the rivers and lakes as given in our map are copied from his, with the exception of those on the Atlantic coast mapped by Messrs. Reichel and Weiz. Hind, however, strangely ignores the Esquimaux River, which empties into the Strait of Belle Isle.* According to Hind, whose work appeared in 1863, and who obtained his information from employés of the Hudson Bay Company: "The couriers of the Hudson Bay Company traverse the country between Musquano (or Natashquan) and Hamilton Inlet two or three times every year. The journey can be made in fifteen days in canoes, and this route has long been a means of communication between Hamilton Inlet and the Gulf. The St. Augustine forms the great canoe route of the Montagnais through this part of the country. . . . The St. Augustine, falling into a fine bay of the same name, has its source in the lakes and marshes on the table-land, which also give rise to the Kenamon, which falls into Hamilton Inlet. By this route the Montagnais can journey in their canoes from the Gulf of St. Lawrence to Hamilton Inlet in seven days."

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* "The Kenamon River, which enters Hamilton Inlet from the south, cuts through the Mealy Mountains thirty miles from the coast; it is a succession of rapids, and scarcely admits of navigation, even by canoes. The Nasquapee or Northwest River falls into the inlet on the north side, nearly opposite the mouth of the Kenamon. The inlet is here twelve miles across. About two miles from its outlet the Nasquapee River passes through a long narrow lake bordered by high mountains. It takes its source in Lake Meshikumau (Great Lake), and the river itself, according to Indian custom, is called by the Nasquapees Meshikumau Shipu. There is a canoe communication between this river and the Ashwanipi, which is shown on two maps, constructed by Montagnais Indians, in my possession."—Hind's "Labrador," ii., 138.

The country north of Hamilton Inlet is thus described by one of the Hudson Bay Company's officers (presumably Mr. McLean) who was sent to explore it: "From Northwest River House the Nasquapee River is ascended for about sixty-five miles, when it is left at Mont à Reine Portage. The country from Mont à Reine Portage to Little Seal Lake is as barren and as miserable as can be seen anywhere; the trees are all burnt, and nothing but stones and dry stumps to be seen. On the 1st of July, 1839, the ice was still firm on Meshikumau or Great Lake. There is no wood to build on the shores of that extensive sheet of water; it is only at Gull Nest Lake that wood remains in that direction. The borders of Nasquapee River, when the expedition ascended it in June, were still lined with ice, some of it ten feet thick." (Hind.)

South of Hamilton Inlet, after passing the first range of mountains on leaving the bay, an elevated plateau is gained, says Hind, which continues until the shores of the Gulf of St. Lawrence are approached, when the country becomes more mountainous and slopes rapidly to the seaside. The breadth of the plateau is 100 miles, and it abounds in lakes.

The Atlantic system of streams to the north is one of small rivers flowing into the ocean in an easterly course.

Ungava Bay receives two important rivers which imperfectly drain the northwestern slope of Western Labrador. The smaller of the two is the Kangutlualuksoak or George River, which empties into the bay in lat. 38° 57′, and is 140 miles long. Its water-shed is said by Kohlmeister and Knoch to be a chain of high mountains which terminates in the lofty peaks of syenite at Aulezavik Island and Cape Chudleigh.

The two Moravian missionaries mentioned above state in addition that "this chain of mountains may be seen from the Kangutlualuksoak River, in Ungava Bay, which is collateral proof that the neck of land terminated to the north by Cape Chudleigh is of no great width. Both the Nain and Okkak Esquimaux frequently penetrate far enough inland to find the rivers taking a westerly course, consequently towards the Ungava country. They even now and then have reached the woods skirting the estuaries of George and South Rivers." These missionaries describe the Koksoak or South River as flowing smoothly through a low, rocky (probably Silurian) district, and emptying into Ungava Bay in lat. 58° 36′. It is said to resemble at its mouth the Thames, and affords anchorage for vessels twenty-four miles from its mouth. This stream probably arises near the source of the Grand or Hamilton River, and flows in a N. N. W. direction, probably along a natural fissure formed by the juncture of the Silurian rocks and Laurentian system.*

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* This river is said to have its source in Lake Caniapuscaw, which is 70 miles long and 20 broad, situated in the centre of the peninsula, equidistant from the St. Lawrence, from Ungava and Hamilton Inlet, being 350 miles from each of those points.

"It is rapid and turbulent, flowing through a partially wooded country. At South River House (now abandoned) it receives the Washquah River, which forms the route of communication between Ungava Bay and Hamilton Inlet. From this point to the sea (150 miles) the current, though strong, is less broken by rapids; it also widens very much, and ninety miles from its mouth it is a mile in breadth, flowing between high rocky banks, thinly clothed with trees; it is nearly a league in width. Fort Chimo is situated twenty-eight miles from the sea." George's River was ascended by officers of the Hudson Bay Company to establish relations with

At the western political boundary-line between Labrador and Prince Rupert's Land, according to recent maps, we find apparently another water-shed, which on the eastern slope sends a few streams into the Koksoak River, while on its western slope descend several streams which flow in a westerly course into Hudson and James' bays.

Thus it will be seen that these four river systems take their rise from a great water-shed which curves in a southwesterly direction from Labrador along the northern shores of the St. Lawrence River and the Great Lakes.

Lakes.—The following remarks are taken from our memoir on the "Glacial Phenomena of Labrador and Maine." *

Labrador is essentially a *lake* district. Its numerous rivers afford a very imperfect system of drainage to a country densely covered with lakes, ponds, and pools, and morasses innumerable. It resembles in this respect the probable aspect of the Lake or Terrace period in New England and Canada after the Glacial period, when the present broad rivers were only chains of lakes, and may thus be said to be in an embryonic stage, as its river-beds have never been remodelled and scooped out into gentle declivities and broad valleys, nor immense depths of sand and clay deposited to smooth over the inequalities of the rocky surface of the country, such as in the temperate zone

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the Nascopé Indians, near its source. For 220 miles it was, though full of rapids, deep enough for barges. "The general course of the river is north, running parallel to the coast of Labrador, where it is at no time more than 100 miles distant, and often much nearer" (Hind). We may expect a full description of the region about Fort Chimo when Mr. L. Turner's report is issued, as he spent two years at this station.

* Memoirs of the Boston Society of Natural History, i., 210–303, 1866.

render a continent inhabitable throughout its breadth; while in Labrador man can only inhabit the coast, and gain a livelihood from the sea.

We must distinguish two classes in the lakes of Labrador, viz.: the deep mountain *tarns*, lying in the interior, directly upon the summits of the water-sheds; and the far more numerous broad, shallow lakes and pools spread profusely over the surface below the height of land. These last occupy shallow depressions and hollows, most probably excavated by glaciers in valleys which have been simply remodelled by glacial action. The deep tarns, on the contrary, evidently fill original depressions, sinking between lofty ranges of hills. Davies says that in the region about the source of the Hamilton River the lakes are very deep, and lie directly on the height of land, while the ponds on the lowlands are shallow; and, on the other hand, those which directly communicate with the ocean or with the fiords are in general distinguished for their depth. "This almost universal shallowness of the lakes is a singular feature, when the nature of their borders is taken into consideration, as they are generally surrounded by hills, which would lead one to look for a corresponding depth in the lake; but instead of this some are so shallow that for miles there is hardly water enough to float a half-loaded canoe. I am informed by my friend, John McLean, Esq., that this is likewise the case with the lakes lying on the water-shed of Ungava Bay. The lakes lying *on* the table-land are said to be deep." He also states that the large lakes in the interior are well stocked with fish, while the shallow lakes, and, in fact, the deep ones communicating with the ocean, are in general very destitute of them.

We must believe that the same causes that produce the deep fiords likewise account for these deep fissures and depressions in the summit of the water-sheds. It is evident that any amount of glacial action, however long sustained and vast in its operation, can never account for these rude, irregular, often "geoclinal," troughs which follow lines of fracture and faults, lying along the axis of elevation of mountain chains, or at nearly right angles to them.

Fiords.—The fiords on the Labrador coast are of great extent and depth. They are either original lines of fracture and faults, or what Professor Dana terms *geoclinal* troughs, occurring at the line of juncture of two rock formations. Thus, Chateau Bay is a fissure at least 1,200 feet in depth. The western shore rises 600 feet above the sea-level, and the waters of the bay at their deepest are 600 feet in depth. This fault must have been produced at the time of the upheaval of the syenites of the coast.

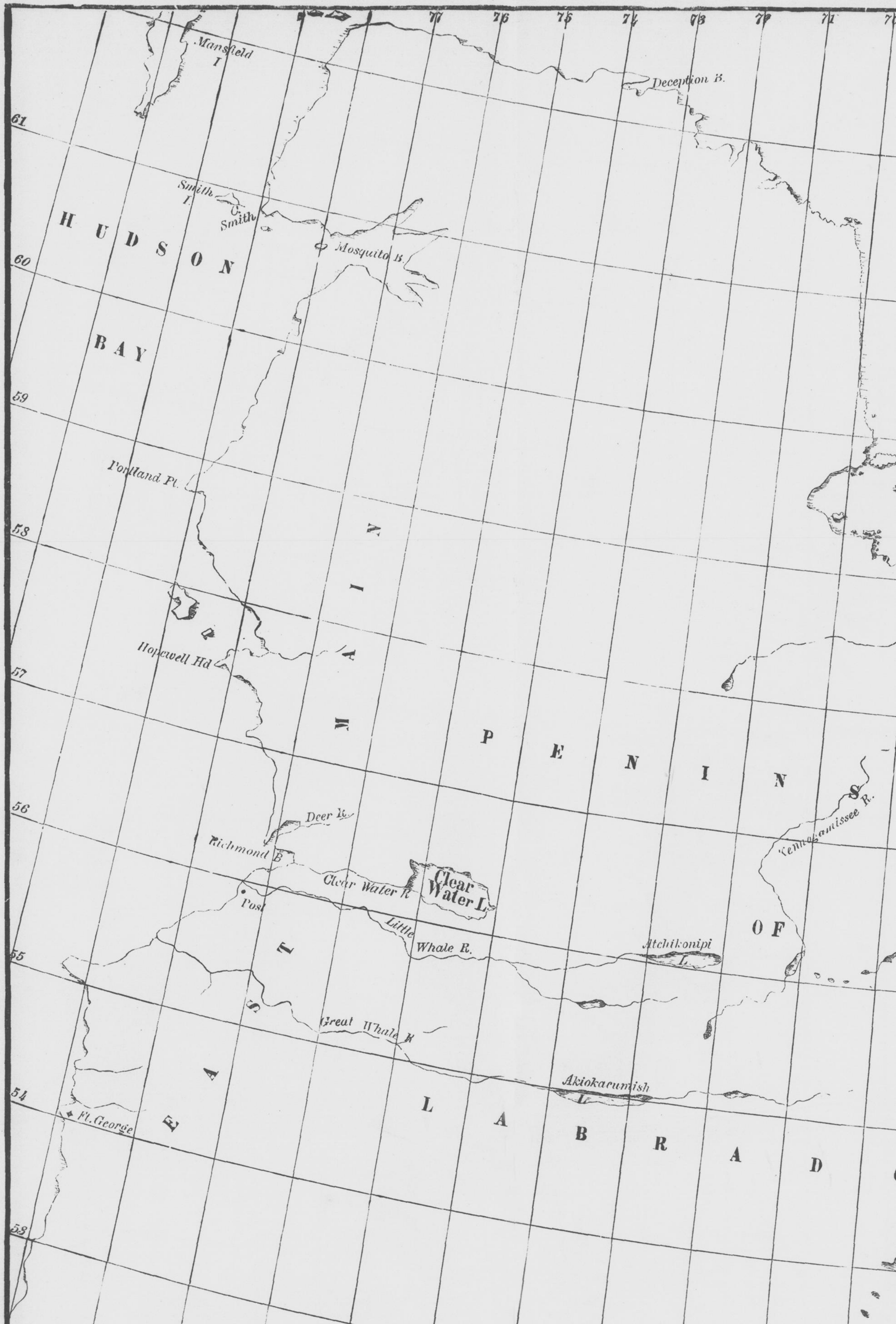
All the broad, deep bays and fiords on the Atlantic Ocean occur at the juncture of the syenites and gneiss. There are deep bays between Cape St. Lewis and Cape St. Michael's, where syenites rise through the gneiss, producing faults and lines of dislocation. The large bay just north of Cape St. Michael's occurs at the junction of gneiss and " hyperite " rocks. Sandwich Bay and Hamilton Inlet were formed by the denudation of the Domino gneiss. Despair Harbor is a deep fiord occurring at the juncture of the "Aulezavik gneiss" of Lieber, with syenitic rocks forming the coast-line between this point and Hopedale. The irregular overflows of trap and syenitic rocks which enclose the gneiss rocks, produce an immense number of cross fiords and channels, from the presence of innumerable islands which line the coast, and are composed of these eruptive rocks.

These original fissures and depressions have been modified by glaciers, by frosts and shore-ice and ice bergs, and by the waves of the sea.

The shallow lakes, formed most probably by glaciers, lie in shallow troughs, upon a thin bed of gravel and boulders. We only learn in some regions, especially in Southern Labrador, that the country has been covered with boulders by their presence on the banks and in the centre of these pools. Clear examples of lakes partially surrounded by walls of rock, with the banks at one end completed by a barrier of sand and gravel, are frequent. Such barriers of drift have lost entirely their resemblance to glacial moraines, to which they undoubtedly owe their origin, since the drift deposits have been remodelled into sea beaches composed of very coarse gravel and boulders, while the finer materials have been swept away by the powerful "Labrador current," with its burden of icebergs and floe-ice that has so effectually removed traces of the former presence of what we must believe to have been extensive glaciers.

From all that has been published, it would seem that the entire interior of the Labrador peninsula is strewn with boulders, having once been covered with land-ice, which flowed into the Atlantic on the east and south, and Hudson Bay on the west and north. The forest growths sometimes clothe the lower hills, but in general are confined to the protected river-valleys and lake basins.

It is to be hoped that at no distant day some skilled explorer, with a sufficient knowledge of geology, may thread the interior of the peninsula from Ungava to Hamilton Inlet, passing thence by the Esquimaux River to the Strait of Belle Isle. The region from the headwaters of the Hamilton River to Hudson Bay should also be traversed, and when this is done we shall be provided with a knowledge of this vast shadowy, gloomy, forbidding region, of which we now apparently know less than of the interior of Alaska, the tundras of Siberia, or the plateaus of Central Africa.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Mansfield I
Deception B.
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Smith I.
C. Smith
HUDSON BAY
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Mosquito B.
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Portland Pt.
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EAST MAIN
Hopewell Hd
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PENINSULA OF LABRAD
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Deer R.
Richmond B
Kennogamissee R.
Clear Water R
Clear Water L.
Post
Little Whale R.
Atchikonipi L.
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Great Whale R
Akiokacumish L.
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Ft. George
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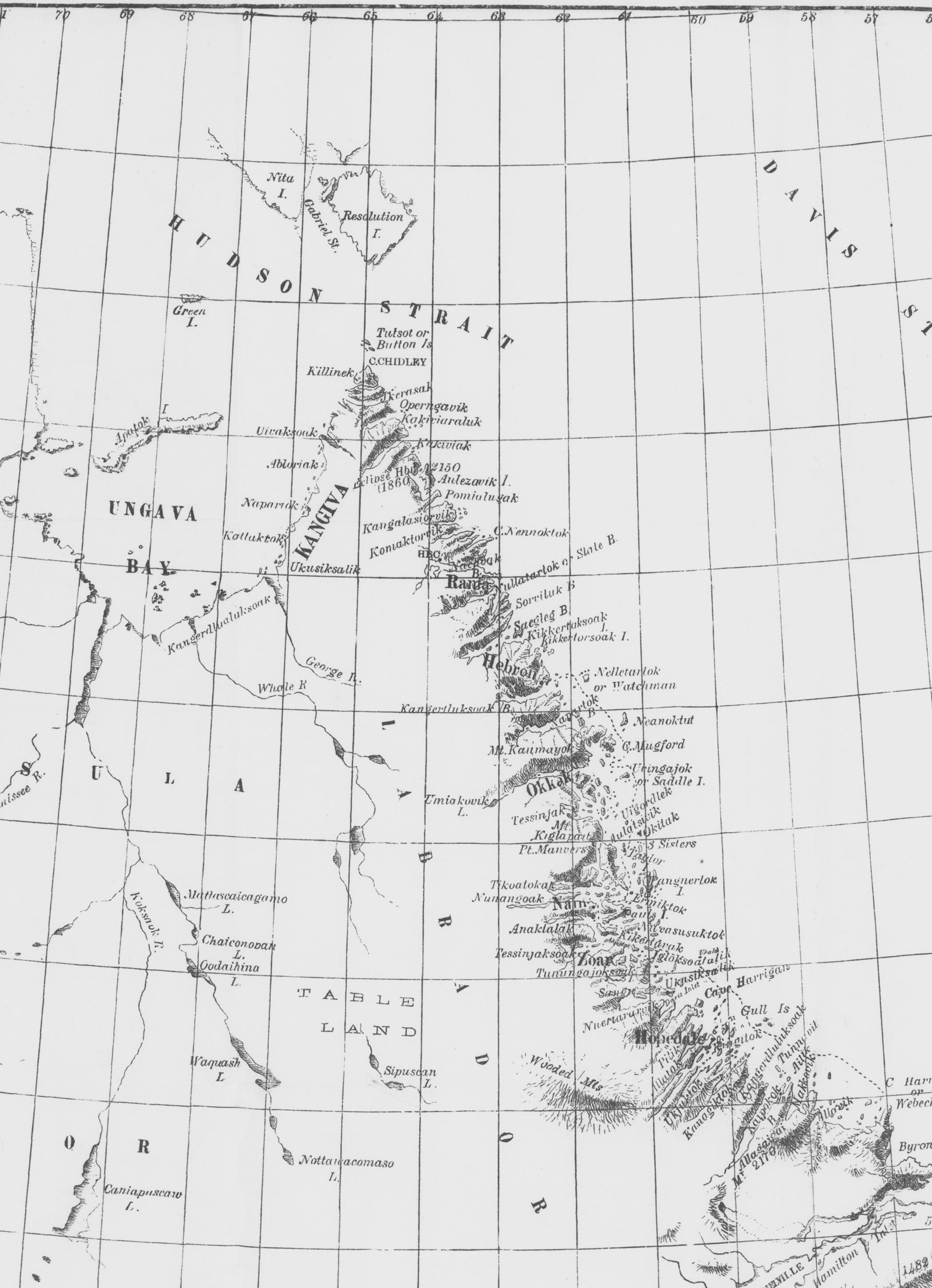
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HUDSON STRAIT
DAVIS ST
Nita I.
Gabriel St.
Resolution I.
Green I.
Tutsot or Button Is
C.CHIDLEY
Killinek
Ikerasak
Operngavik
Kakiviaraluk
Kakiviak
Uivaksoak
Apatok I
Abloriak
Eclipse Hbr (1860)
2150
Aulezavik I.
Pomialugak
Naparlok
UNGAVA BAY
KANGIVA
Kangalasiorvik
C.Nennoktok
Komaktorvik
Kattaktok
HBC
Nachvak B.
Ukusiksalik
Ramah
Nullatartok or Slate B.
Sorviluk B
Saeglek B.
Kikkertaksoak I.
Kikkertorsoak I.
Kangerdlualuksoak
George R.
Whale R
Hebron
Nelletartok or Watchman
Kangertluksoak B.
Napartok B
Neanoktut
Mt.Kaumayok
C.Mugford
Uringajok or Saddle I.
Okkak
Umiakovik L.
Tessinjak
Uigordlek
Aulatsivik
Okitak
Mt. Kiglapait
3 Sisters
Pt.Manvers
Taylor
Tikoatokak
Pangnerlok I.
Nunangoak
Nain
Erniktok
Pauls I.
Anaklalak
Nitteasusuktok
Kikertavak
Tessinjaksoak
Iglōksoalalik
Zoar
Tunungajoksoak
Ukasiksalik
Davis Inlet
Cape Harrigan
Nuertaruvik
Gull Is
Hopedale
Kingitok
Pitik
Kangerdluluksoak
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Makkovik
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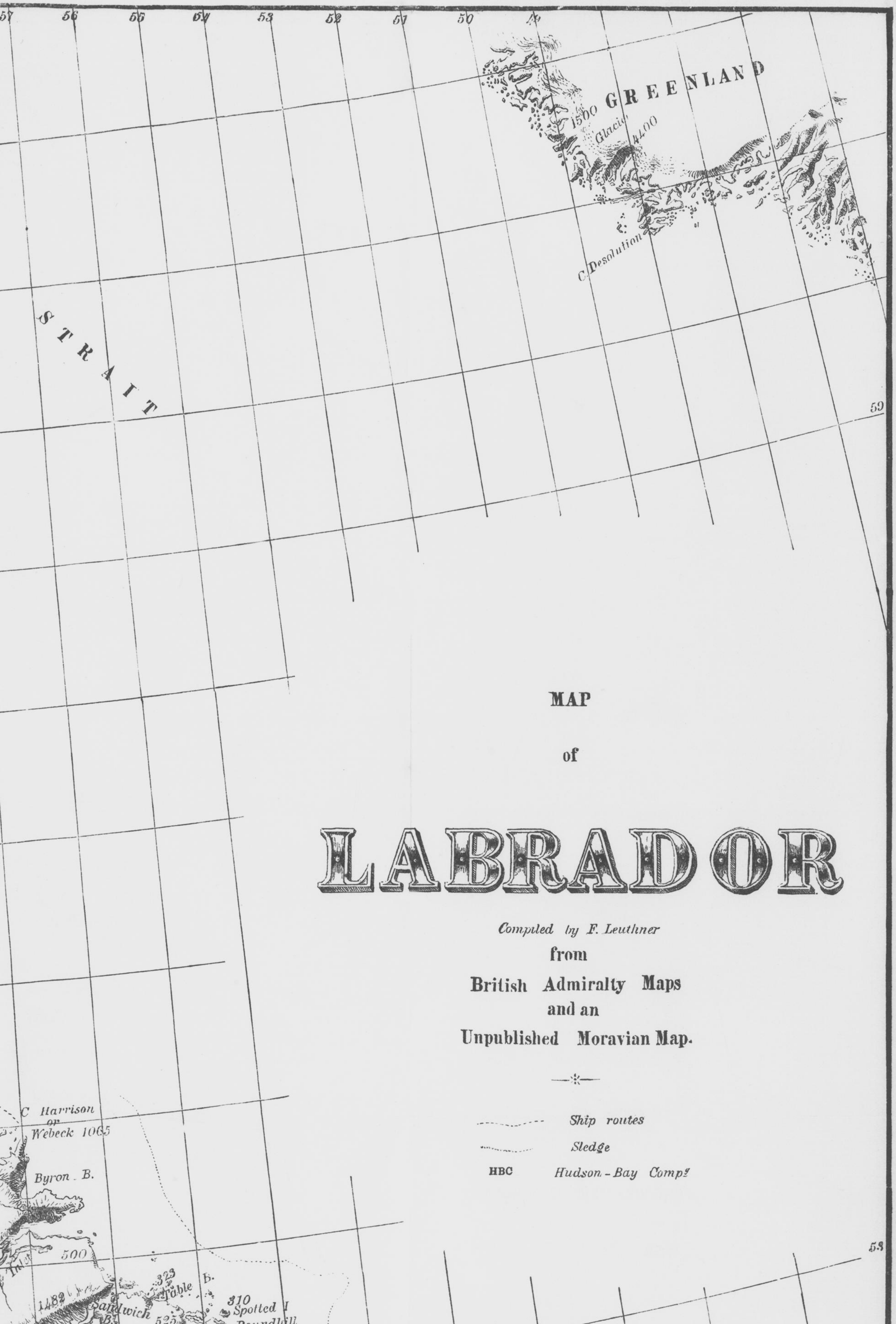
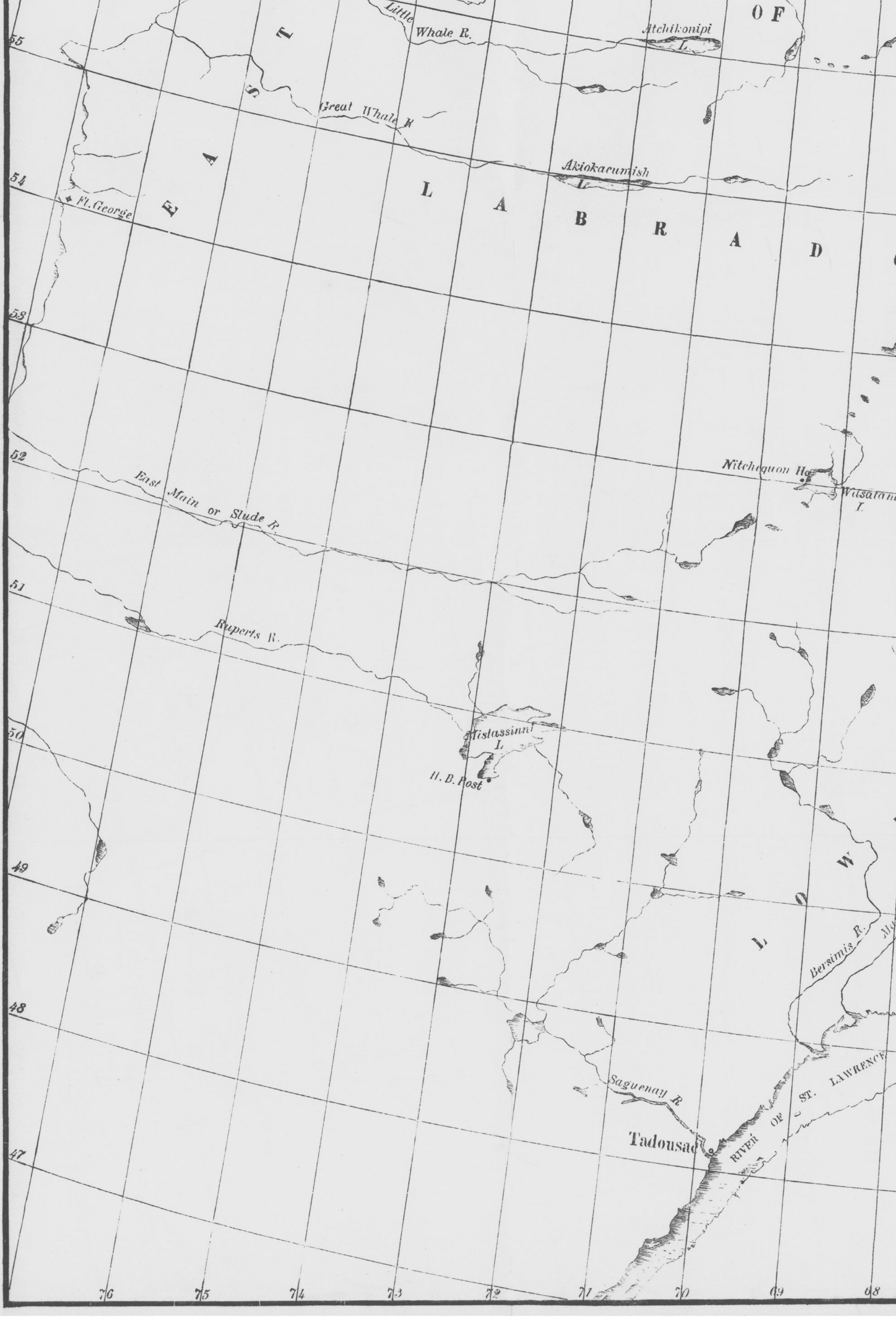
Caniapuscaw L.
MELVILLE
Hamilton Inlet
1482



MAP
of
LABRADOR

Compiled by F. Leuthner
from
British Admiralty Maps
and an
Unpublished Moravian Map.


OF
Little Whale R.
Atchikonipi L.
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E A S T
Great Whale R.
Akiokacumish L.
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Ft. George
L A B R A D O
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Nitchequon Ho.
Wasatan L.
East Main or Slude R.
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Ruperts R.
Mistassinni L.
H. B. Post
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L O W
Bersimis R.
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Saguenay R.
Tadousac
RIVER OF ST. LAWRENCE
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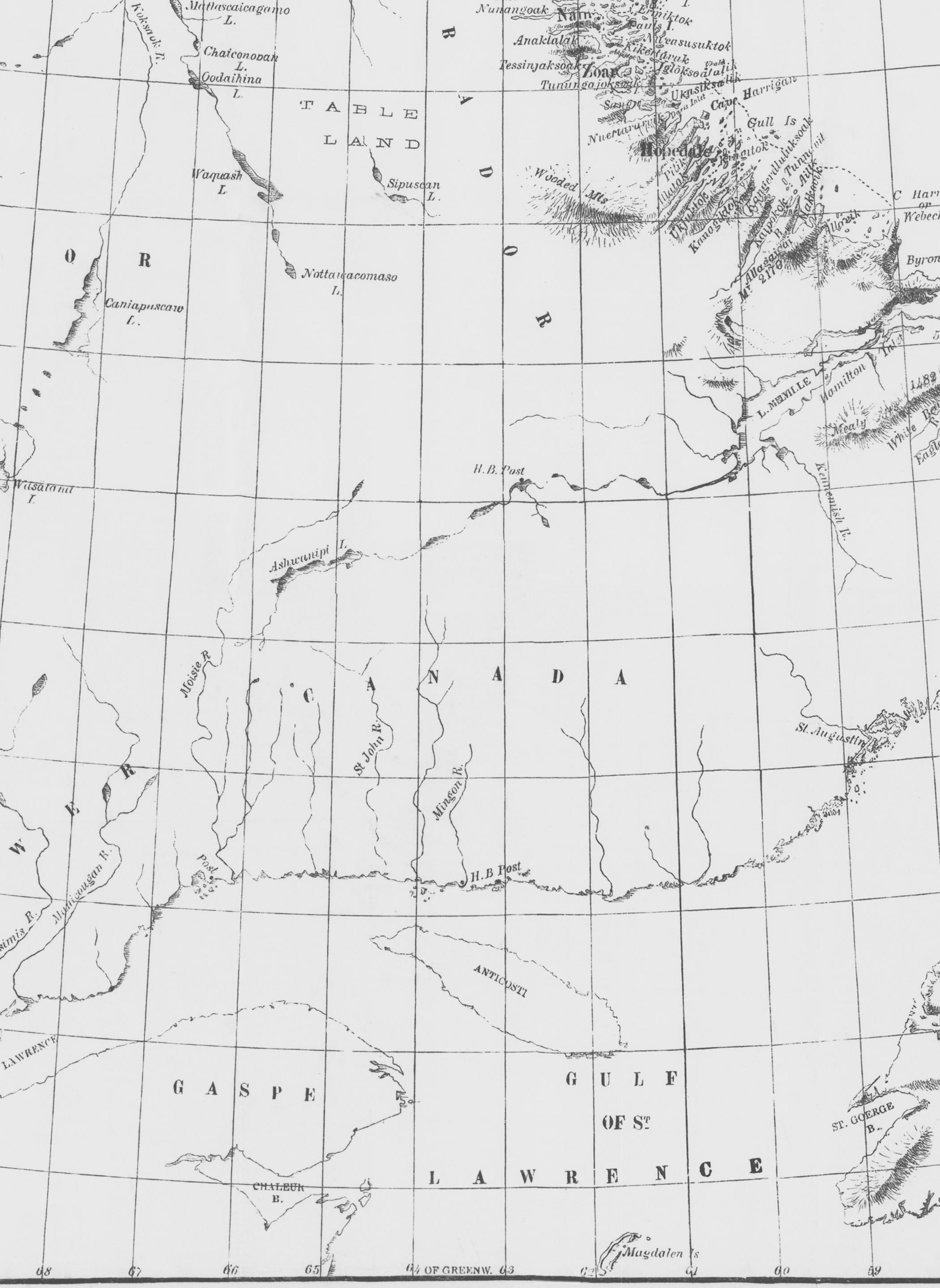
Mattascaicagamo L.
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Davis Inlet
Cape Harrigan
Gull Is
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Hopedale
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Ukjuktok
Kanagiktok
Kangerdluksoak
Tunnuvit
Ailik
Kaipokok R.
Makkovik
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Byron
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L. MELVILLE
Hamilton Inlet
1482
Mealy
White Bear R.
Eagle
Kenemish R.
H. B. Post
Witsatami L.
Ashwanipi L.
Moisie R.
C A N A D A
St John R.
Mingon R.
St. Augustin
Post
H. B Post
W E R
Manicougan R.
Bersimis R.
ANTICOSTI
LAWRENCE
G A S P E
GULF OF ST. LAWRENCE
CHALEUR B.
Magdalen Is
ST. GOERGE B.
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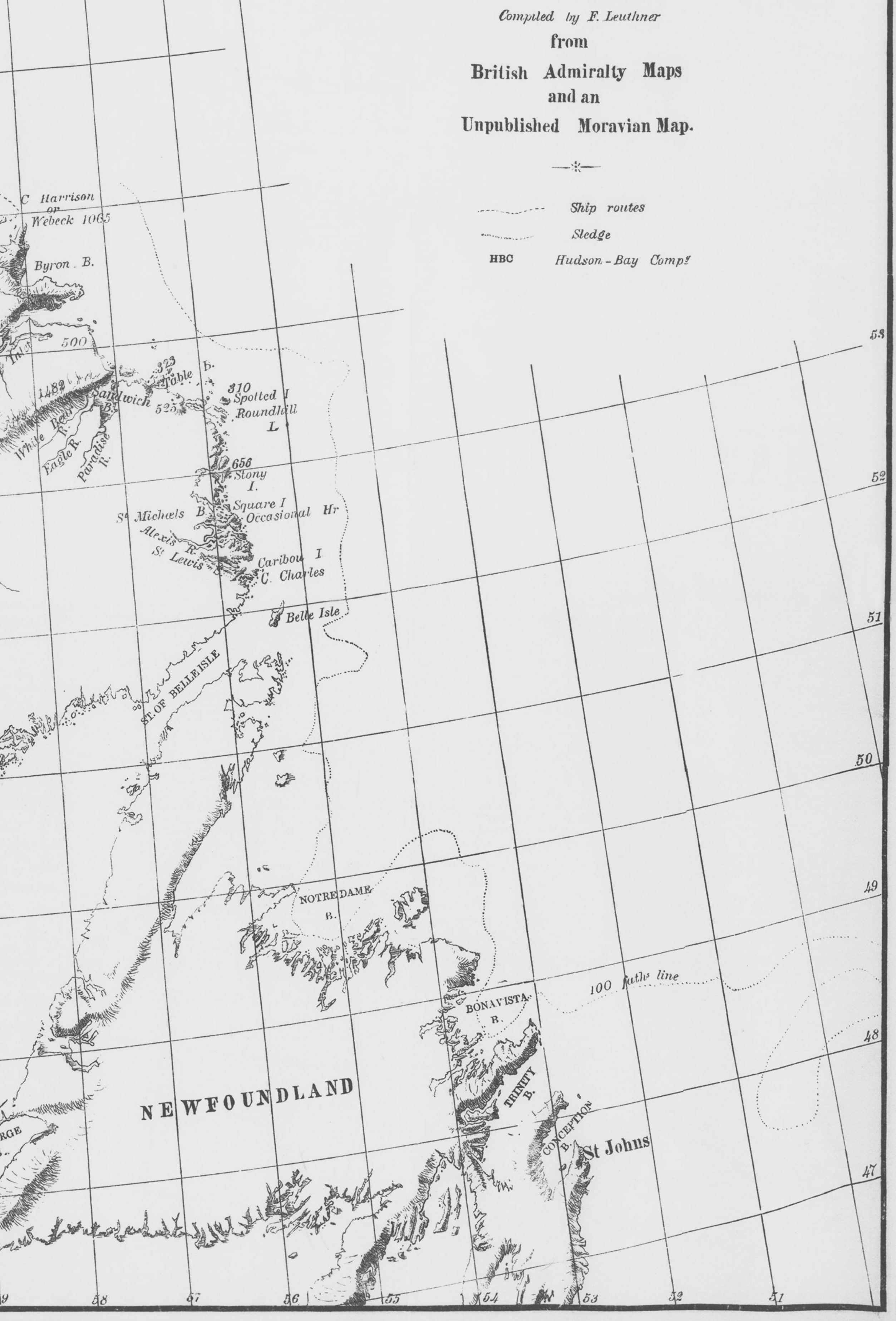

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